

JOB SAFETY ANALYSIS


Worksheet Number or Identifier:

Acid Handling

Job/Operation Title:

Research and academic laboratory work

Date:

06/10/2021

Department/Division/Section:

Chemistry

Developed By:

Chris Frydenlund

Location(s):

ARC, BEP, HPC, HPR, RBN, RBS, WTB

Reviewed By:

Paula Tate

Person(s) Performing This Job:

Students, faculty and staff

Supervisor:

various

Start Date:

All Spring, Summer, and Fall semesters.

Duration:

24/7

Task/Step	Potential Hazards	Required Job Procedures
1. Preparation a. Obtain proper physical materials to use, dilute, or dispose of the acid. b. Obtain and don PPE c. Obtain SDS, manufacturer label, and other information concerning acid handling	1. Sharps from broken glass or needles and potential blood borne pathogen complications. 2. Corrosive chemicals to human tissue and other material. 3. Reactive chemicals to unclean material, instrumentation, or contaminated solution. 4. Slip, trip or fall	You must come prepared to work including reading the SDS, manufacturer's label and specific protocol for use with acid experiments. Ensure you safety and carefully handle all materials. Ensure the correct material is gathered for the protocol as specified in the protocol. Ensure you are within one year of general chemical safety training and training specific to the task within the protocol. Always use proper personal protective equipment (PPE) and clothing: suitable gloves, eye protection, closed toed shoes, shirt and pants (lab coat is highly recommended especially for strong acids).
2. Conduct the academic experiment.	1. Sharps from broken glass or needles and potential blood borne pathogen complications. 2. Splashes and aerosol contact with mucous membranes, eyes or skin. 3. Volatile reactions from incompatible material or adding water to a strong acid. 4. Mixing in unventilated areas causing risk of inhalation exposure.	Ensure the SDS is available in case of a hazardous incident and only follow the approved protocol. In case of contact, wash exposed area for at least 15 minutes with the emergency shower or eyewash. Use, mix or dilute acids in certified fume hoods only. Use secondary containment to prevent large spills and the spread of broken glass or other sharp objects. Never work in the lab alone. Stop work immediately if PPE fails, ventilation systems fail, spills occur, or other emergency.

Task/Step	Potential Hazards	Required Job Procedures
3. Completion/cleanup	<ol style="list-style-type: none"> Sharps from broken glass or needles and potential blood borne pathogen complications. Splashes and aerosol contact with mucous membranes, eyes or skin. Using incorrect waste stream causing environmental hazards, volatile reactions, and other potentially hazardous situations as a result of mixing. Leaving area and materials unclean 	<p>Ensure all UT Tyler waste policy is followed</p> <p>Dispose of all chemicals in a matter consistent with the product's SDS, manufactured label, or recommended by the protocol.</p> <p>Clean all glassware and around the area using compatible cleaning products and recommended PPE.</p> <p>Wash hands for at least 20 seconds after doffing all PPE before leaving the laboratory.</p> <p>Never leave an active experiment unprotected or unattended. Ensure all precautions are taken if left for any period of time.</p>

POTENTIAL HAZARDS OF THIS JOB: PHYSICAL

Hazards	Prob.	Sev.	Consequences
Combustible materials	1	2	Chemical burns, organ damage, poison and/or death.
Corrosive materials	2	2	Chemical burns, organ damage, poison and/or death.
Flammable materials and liquids	1	2	Exposure (inhalation, contact, ingestion) of hazardous acids or other chemicals leading to toxicity, poison and/or death.
Flammable/reactive chemicals			
Sharp objects	1	1	Penetration by sharp object and possible blood borne pathogen contamination.
Ventilation	1	1	Inhalation of hazard fumes, aerosols or dusts leading to toxicity, poison and/or death.

POTENTIAL HAZARDS OF THIS JOB: CHEMICAL

Hazards	Description/Health Hazards
Strong acids	NFPA 704 Health 3; corrosive, poison, toxic
Corrosive organic molecules	NFPA 704 Health 3; poison, toxic, carcinogen
Toxic organic molecules	NFPA 704 Health 3; poison, toxic, carcinogen
Strong bases	NFPA 704 Health 2; corrosive, poison, toxic
Various salts	NFPA 704 health hazard 2; irritation, poison

Risk Assessment Legeng

Probability	Severity
1 - Low	1 - Low
2 - Medium	2 - Medium
3 - High	3 - High

Contact Information

- 1) **CALL 9-11 IN CASE OF EMERGENCY**
- 2) Call Police Dispatch at (903) 566-7300
- 3) Call Environmental Health and Safety at ... (903) 566-7011